A STUDY ON IMPACT OF PHYSIQUE ON HEALTH CONDITIONS OF HUMAN BEINGS IN VIRUDHUNAGAR REGION

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Abstract:

Health is the primary concern of all living beings. There are many reasons behind the drastic increase in health issues among the humans. One such reason is not maintaining the physique.Though good physique improves beauty, there is probability of identifying the health condition of a human being by their physique.Changes in life style and marching towards more consumption of fast foods and junk foods made many people to lose their physique which paved the way for obesity and diabetes. Anthropometry is a science of measurements and proportions of Human body with which we can calculate the body mass index and other parameters which forms as the bases to study about their health condition. An attempt is made to collect the parameters related to physique and to study the impact of these parameters with their health condition such as obesity and type 2diabetes.

Key words: Body mass index, Anthropometry, Obesity and Type 2 Diabetes.

Introduction:

Admiration is still in existence when we look at many architectural contributions by our ancestors. Temples were built before the invention of earth movers or cranes which is used for lifting heavy objects. The sword used in a war field which is available in many museums gives a clear idea about the physique of our ancestors. They were strong enough to carry out many tasskseasily without the need of machines. They were able to built massive structures which became great monument.

Though science and technology made our life more comfortable, the bad physique and rising health issues among humans are alarming.

As per the data collected by Ministry of family health welfare in 2015, the proportion of people with obesity and diabetes has doubled since 2005. Their report significantly indicates that lack of awareness among the people about obesity and diabetes is more hence there is need for many programmes to be conducted to create awareness.

Many Government and NGO's started creating awareness among the people about the impact obesity and type 2 diabetes and how to prevent it.People in urban regions are mostly affected than in rural areas. Lack of physical work and food habits are the primary reasons for entering the world of obesity.

Obesity was there among adults in a larger proportion during few decades ago and now became common for all age groups. New born babies are also affected by diabetes.

Physique is one of the indicators of health condition of a human being. A person with overweight has the high risk of being affected by cardiovascular diseases. Similarly a very thin person may be undernourished. Maintaining good physique decreases the possibility of getting sick.

Anthropometry is a science which deals with measurements and proportions of our body. It gives a clear idea about the standards of physique to be maintained for a healthy living.

Virudhunagar region is well known for parotta which is made out of Maida. Many irrespective of their ages are addicted to parotta. More demand is there with high salary package for parotta masters in Virudhunagar district. Hence it is decided to collect data related to the physique of people living in Virudhunagar region and study about the health issues they are facing because of non maintenance of their physique.

Materials and methods:

Survey is one of the best tools to collect primary data. A questionnaire is prepared to collect data from the chosen population. 300 people in the age group between 25 and 50 were chosen for the study.Population from urban, semi-urban, rural areas of in and around Virudhunagar district was taken as study subjects. A total of 300 adults comprising of 124 males and 176 females were chosen. A well formulated interview schedule was used to elicit the information pertaining to socioeconomic background, lifestyle and activity pattern and anthropometrical measures of the study population.

Anthropometric measurements such as weight and height, waist and hip circumference were measured for all the selected samples by using spring flat weighing machine (Bath room scale) and height by using non-stretchable measuring tape respectively.

Body mass index (BMI) was calculated from the weight and height values using the formula- BMI = (Weight in kg/height in meter2).The waist circumference was measured in a horizontal plane, mid way between the inferior margin of the rib and superior border of the iliac crest**.**The hip circumference was measured at the level of the greater trochanters, with the legs being held close together. Waist hip ratio (WHR) is calculated by dividing the waist circumference and the hip circumference.

$$BMI = \frac{\text{Weight in kg}}{\text{Height in m}^2}$$

Table – 1. BMI – Grade chart

BMI	Grade
Below 18.4	Underweight
18.5 – 22.9	Normal
23.0 – 24.9	Overweight
25.0 – 29.9	Obesity I
>30	Obesity II

Survey Camp : Assessment of Anthropometry

RESULTS AND DISCUSSION

Socio Demographic profile of the respondent

The health status of the population depends on their socio-economic background. The socio economic conditions, Parents educational qualification and occupational conditions are the powerful determines of adolescents health status. The general information of the respondents like age, type of family, size of family, was studied. Hence the information pertaining to the socio-economic status were calculated and presented in the table 2.

Table 2:Demographic profile

		N	%
SEX	**MALE**	124	41.3
	FEMALE	176	58.6
EDUCATION	Graduate	101	33.6
	Matriculate	107	35.6
	Illiterate	92	30.6
OCCUPATIONAL	Sedentary	138	46
	Moderate	101	33.6
	Heavy	61	20.33
RESIDENTIAL AREA	Rural	122	40.66
	Urban	139	46.3
	Semi-Urban	39	13
TYPE OF FAMILY	Nuclear	187	62.3
	Joint	113	37.6

The majority of the subjects who turned out for the study were from the urban areas and mostly from nuclear families.Surprise element here is that the percentage that turned out from rural area is 40.67%. This shows that even rural people now days are conscious of their health and are aware of all elements concerned to it in order to look after their health in good way. This is a welcome aspect.

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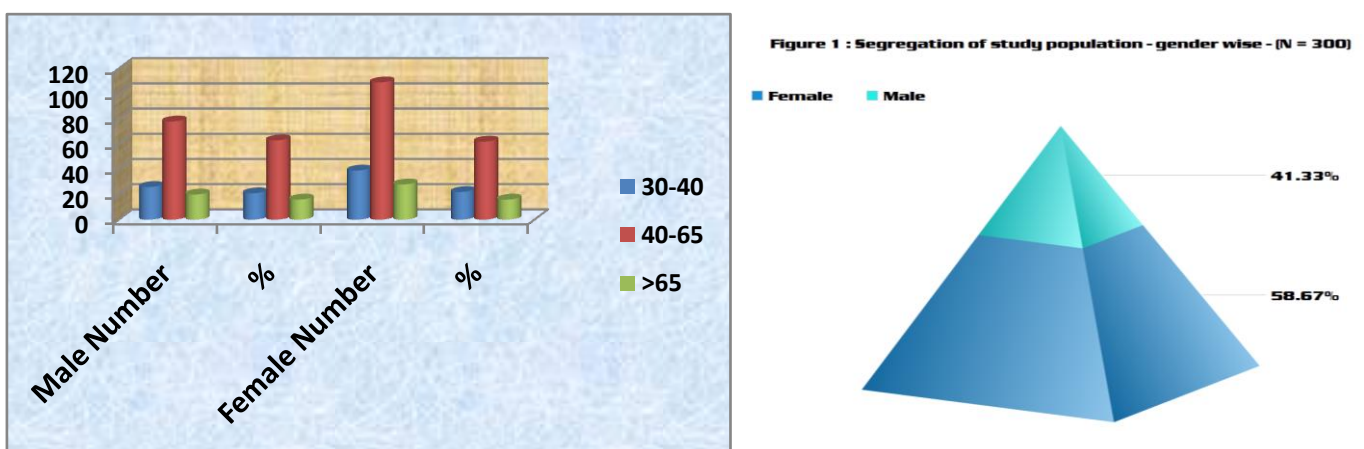**Fig 1: Age and sex wise distribution of the study population**

Fig 1 shows the percentage of male and female who turned out to be the study population and made the study possible. The females presence were more than the males.

Anthropometrical status of the selected respondents:

The anthropometrical measurements such as height, weight, mid arm circumference andwaist hip radio were measured from the respondent. It is effective indicator of health status. TheBody mass index (BMI) was calculated and waist Circumference radio (WCR) was calculated. The data obtained are presented in the table 3.

Table 3- Body Mass Index of the Respondent

BMI	Obesity Grade	Male		Female	
		N	%	N	%
<18	Under Weight	15	12.09	27	15.34
18-23.9	Normal	40	32.26	52	29.54
24.9-29.9	Over weight	32	25.8	51	28.97
30-34.5	Obese	24	19.35	37	21.02
>35	Morbid Obesity	13	10.48	09	5.11
Total		124		176	

Fig- 2 Body Mass Index
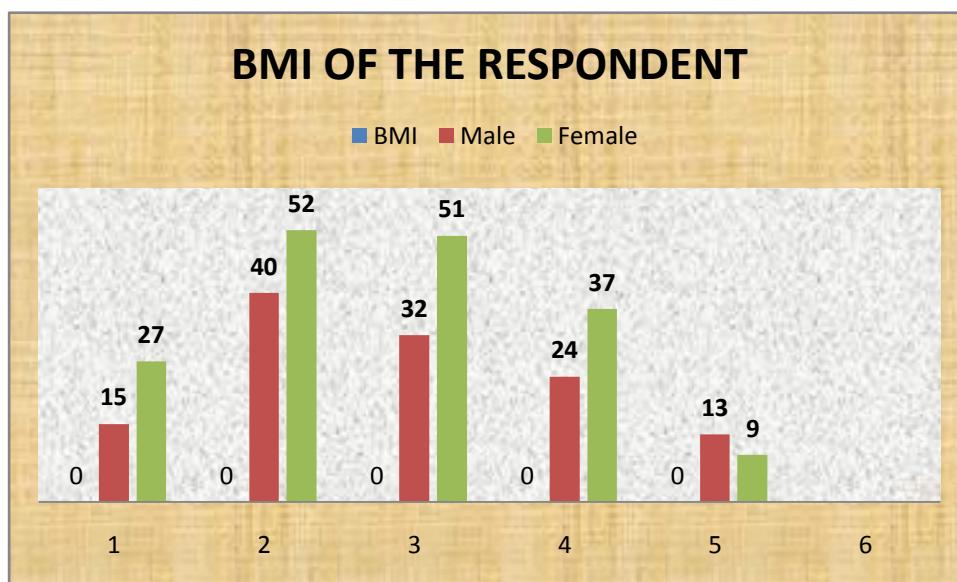
BMI is one of the prime anthropometric measures that have an effect on diabetes syndrome. So without an analysis on this BMI factor the study will not be a complete one.

BMI was calculated for each subject from the weight and height values by the following formula – BMI = (weight in kg / height in m^2). Majority of male (32.26%) and female (29.54%) subjects were categorized under normal BMI with value 25 kg/ m^2. This may be one of the reasons why the non-diabetic percentage was higher (61%) than the diabetic (38.9%) in this particular study. Next about 25.8% male and 28.97% of female were overweight, which comes under risk of obesity – Grade I category.

Grade II category percentage is as follows – 19.35% males and 21.02% females. The risk chance to be affected with Type 2 diabetes is still higher in this case than Grade I category.At last the high risk category where the BMI is above 40 kg/ m^2 termed as morbid obesity is 10.48% male and 5.11% female.

When the male and female percentage was almost nearly equal in other categories, it is here that the male percentage is considerably higher than female percentage, which shows that males are more easily prone to obesity than females.Diabetes develops at a lower BMI in Indians. And it is triggered in men at lower BMI than women.There was a significant independent relation between the prevalence of diabetes in people who were underweight and normal weight and people who were overweight and obese. The relationship of type 2 diabetes mellitus and obesity is well known and has been shown in many other surveys.

TABLE4 :WAIST CIRCUMFERENCE

WAIST CIRCUMFERENCE	FREQUENCY N=300	PERCENTAGE
Normal	189	63
High	111	37

Table 4 shows the waist circumference under two categories Normal and High in percentages. Waist circumference is one more significant anthropometric parameter in this survey next to BMI. The waist circumference was measured in a horizontal plane, midway

between the inferior region of the rib and the superior border of the iliac crest*.The iliac crest is the curved superior border of the ilium, the largest of the three bones that merge to form the hip bone. When a person places his hand on his hip, it is the skin above the iliac crest that he rests his hand on.

About 63% i.e.; more than 50% were under normal category, this point again shows why the non-diabetic percentage was high in this study. Only 37% were under high category. This definitely will be one of the factors that have an effect over the diabetic percentage.

Conclusion:

The data collected and analysed shows that the people with high BMI are affected by obesity and type 2 diabetes. People in urban area are most affected than people in rural area.Advancement in Technology has paved way for many Industries to develop rapidly and provide ample employment opportunities for the people around the world. Though developments are happening, it is found that the very less focus is made towards the development of rural areas. More Industries are established in urban areas.

Increasein population and accumulation of industries in a particular area made more people to stay alone after education for employment. Less time is available for them to prepare food. Hence most of them consume what is available or food that requires less preparation time without considering the health benefits derived out of the food they consume.

Drastic increase in the average annual salary of the people working in MNC made them to lead a luxurious life. Many inventions in home appliance especially automation with less human intervention reduced the physical work

Also, living a luxurious life is possible if both husband and wife work to meet the expenses. When parents are busy at work, their kids/teenagers are introduced to junk foods and fast foods. Also they are addicted to video games which require less or no movement.

This study helps to identify the best strategy to create awareness among the people and make them to live a healthy life.

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